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Status of the RF-Driven H^- Ion Source for J-PARC Linac

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For the upgrade of the Japan Proton Accelerator Research Complex (J-PARC) linac beam current, a cesiated RF-driven negative hydrogen ion source [1-3] was installed in 2014 summer shutdown period, and started to operate on September 29, 2014. The ion source has been successfully operated with a beam current and a duty factor of 33 mA and 1.25 % (500 μs and 25 Hz), respectively. The result of recent beam operation showed that the ion source is capable of continuous operation for approximately 1,100 h. The spark rate at the beam extractor was observed to be less than once a day, which is acceptable level for the user operation. Although the antenna failure occurred during the user operation on October 26, 2014, there were no further serious troubles since then. In this paper, we will present the some operation parameters and the beam stability of the RF-driven ion source through the long-term user operation.

References

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